OBJECTIVES: The primary objective of this study is to estimate the number of hip/knee replacements performed in the nation as well as to produce synthetically derived estimates for Ohio. These estimates were then used for the estimation of the economic burden associated with these arthritis related surgeries. METHODS: The 2000 National Hospital Discharge Survey (NHDS) was utilized to estimate the number of hip/knee replacements performed in the nation. The ICD-9-CM procedure codes used to identify patients are ICD-9-CM 81.51 (total hip replacement) and 81.54 (Total/partial knee replacement). The NHDS recorded up to four ICD-9-CM procedures for each discharge. Since the main purpose of this study was to estimate the burden of arthritis-related surgeries, all four procedures recorded for each patient were considered for the identification of arthritis-related surgery. Then, the total number of hip/knee replacements in Ohio was estimated by applying age and sex distributions based on the U.S. census 2000. Since the NHDS does not include cost information on hospital discharges, diagnosis related group (DRG) reimbursement was used to approximate the total hospital charges. RESULTS: In the United States, approximately 9.6 billion dollars were used for 439,833 hip and knee replacement surgeries in the year 2000. In Ohio, approximately 407 million dollars were spent for 18,731 hip and knee replacement surgeries. CONCLUSIONS: The estimated cost for joint replacements alone was nearly $10 billion in the United States during the year 2000. The total cost of joint replacements will be much higher if we include pre and post-operation care.

THE IMPLICATIONS OF RHEUMATOID ARTHRITIS IN THE UK SECONDARY CARE HEALTH CARE SYSTEM
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OBJECTIVES: Rheumatoid arthritis (RA) is an important cause of admission to UK hospital wards, although few estimates of the cost implications of RA in the hospital sector exist in the literature. This study presents a method of estimating the hospital burden of RA in England. METHODS: The CHKS hospital dataset contains aggregated, anonymised information on diagnosis, hospital experience, and patient demographics for over 80 million episodes in the UK. The CHKS sample, which covers approximately 55% of UK hospital admissions, was used to describe and assess the impact of RA-related episodes in England. Patients with RA (ICD-10 codes M05, M06) as a primary or secondary diagnosis were analysed for comorbidities, procedures (identified using OPCS-4 codes), length of stay, and for repeat admissions during the year. RESULTS: We identified 10,425 unique patients admitted with primary RA in 2001. These patients had a total of 17,393 separate episodes, 42% of which were day cases. Mean inpatient length of stay was 6.9 days, resulting in 70,305 occupied bed days. At least 1 invasive procedure was undertaken in 74% of episodes. While these were mainly injections and infusions, there were 1650 joint replacements. From a resource use perspective, the 10% of procedures involving joint replacement accounted for 22% of total occupied bed days. Forty four percent of patients with a primary RA episode also had primary RA episodes in the previous 4 years. A further 15,640 unique patients with secondary RA were also identified, having a total of 28,979 episodes. CONCLUSIONS: Each year, there are over 25,000 unique patients with a RA related episode in England. This represents a substantial resource burden in the National Health Service (NHS). An effective and well-tolerated agent, such as an anti-TNF therapeutic, would help reduce the burden on an already overstretched healthcare sector.

A COST ANALYSIS OF CELECOXIB VERSUS DICLOFENAC PLUS OMEPRAZOLE FOR THE TREATMENT OF ARTHRITIS IN A GROUP OF HIGH-RISK CHINESE PATIENTS
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OBJECTIVES: A local clinical trial showed that celecoxib therapy was comparable in efficacy to diclofenac plus omeprazole in preventing recurrent gastrointestinal bleeding in high-risk patients. The objective of the present study is to evaluate the economic impact of celecoxib therapy versus diclofenac plus omeprazole for the treatment of arthritic patients with high risks. METHODS: A decision tree was designed to analyze the economic and clinical outcomes of a randomized controlled clinical trial. Two hundred and eighty-seven patients with arthritis and active ulcer bleeding were recruited. After ulcer healing had been confirmed, the patients were randomized to receive either celecoxib 200mg twice daily or diclofenac twice daily plus 20mg of omeprazole daily for 6 months. The clinical outcome was incidence of ulcer bleeding. The healthcare resource consumption associated with study patients was retrieved from the trial case reports. The direct medical costs were estimated based upon symptom-driven healthcare resources utilization. The study was performed from the perspective of a public health organization in Hong Kong. RESULTS: Seven out of 144 patients (4.9%) in the celecoxib group and 9 out of 143 patients (6.3%) in the diclofenac group experienced ulcer bleeding. The mean cost for management of ulcer bleeding was HKD19,434 (95% CI: HKD10,950–27,918) (1US = 7.8HKD). The mean total cost of routine follow-up and differential diagnosis during study period for patients in the celecoxib
group and diclofenac group were HKD10,211 (95% CI: HKD9,807–10,615) and HKD11,505 (95% CI: HKD11,140–11,870), respectively. The results of the decision tree analysis showed that the direct cost per patient was HKD11,155 and HKD12,729 for the celecoxib and diclofenac groups, respectively. No threshold value was identified by sensitivity analysis. CONCLUSION: Based on the analysis of the data obtained from a large clinical trial, celecoxib was as safe as diclofenac with omeprazole but appeared to cost less for the treatment of arthritis in a group of high-risk Chinese patients.

VERIFICATION OF A DECISION ANALYTIC MODEL ASSUMPTION USING REAL WORLD PRACTICE DATA: IMPLICATIONS FOR THE COST-EFFECTIVENESS OF COX-2S
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OBJECTIVE: Given the sensitivity of findings to the gastroprotective agent (GPA) rate assumption used in COX-2 cost-effectiveness models, the purpose of this study is to verify the GPA rate assumptions and to re-estimate model outcomes from one published COX-2 cost-effectiveness study using GPA rates from actual practice.

METHODS: Prescription and medical claims data from a large preferred provider organization (PPO) located in the Midwest were used to estimate GPA rates within three samples of adult patients new to non-selective non-steroidal antiinflammatory drugs (NSAIDs) and COX-2 therapy: all new NSAID users, new NSAID users with a diagnosis of arthritis, and a cohort matched on GI risk. Members were continuously eligible over the study period of January 1, 1999 through May 31, 2001. RESULTS: Of the more than 319,000 members with at least 1 day of January 1, 1999, the number of members meeting inclusion criteria in each of the three samples was 1,900 for new NSAID users, 289 with a diagnosis of arthritis, and 1,386 in the matched cohort sample. GPA estimates for non-selective NSAID and COX-2 users were consistent across all 3 samples with COX-2 GPA rates of 22%, 21% and 20% and nonselective NSAID GPA rates of 15%, 15%, and 18%, for new NSAID users, those with a diagnosis of arthritis, and the matched cohort, respectively. Re-estimation of the cost-effectiveness model using the most conservative GPA rates increased the cost per year of life saved for COX-2s from $18,614 to over $100,000.

CONCLUSIONS: Contrary to COX-2 cost-effectiveness model assumptions, the rate of GPA use is positive and marginally higher among COX-2 users than among non-selective NSAID users. These findings call into question the validity of assumptions regarding patterns of use when made prior to a product’s use in the real world. Given these findings, a re-evaluation of the cost-effectiveness of COX-2 therapies should be considered.

COST-EFFECTIVENESS OF RALOXIFENE FOR THE PREVENTION OF OSTEOPOROTIC FRACTURES IN AUSTRALIA
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OBJECTIVES: In Australia, hormone replacement therapy (HRT) is the standard therapy for reducing fracture risk in postmenopausal women with no previous fracture. Therapies like bisphosphonates, calcitriol and raloxifene are used in women with radiographically defined fracture resulting from minimal trauma. The results of the Women’s Health Initiative study point to the need, however, to assess the cost-effectiveness of newer agents in preventing fracture in osteoporotic women without prior fracture. This study aimed to assess the cost-effectiveness of raloxifene in preventing osteoporotic fractures in such a population.

METHODS: A Markov model was developed to compare raloxifene with HRT and with alendronate in osteoporotic women with no prior fracture. Relative efficacy assumptions in the model were based solely on the results of randomised controlled trials (MORE, FIT-II, WHI), while transition probabilities and downstream fracture effects were taken from a range of literature. Primary outcomes included vertebral fractures, non-vertebral fractures, breast cancer and cardiovascular disease in a cohort with a low bone mineral density and an average age of 65 years. The model contained 12 discrete states and yielded costs per quality-adjusted life-year (QALY). Limited memory was incorporated into the model by separating each fracture health state into two states, representing the first and subsequent years after fracture. The model ran for a 30-year period, but therapy was assumed to continue for only 5 years, after which transition probabilities reverted to values associated with no treatment. RESULTS: The incremental cost per QALY gained with raloxifene treatment compared with HRT in a population of osteoporotic women with no prior fracture was $14,506 (US$8,203). In the same population, raloxifene was found to be more effective and less expensive than alendronate. Extensive sensitivity analyses indicated these results were robust. CONCLUSION: Raloxifene is a cost-effective therapy to reduce fracture risk in postmenopausal osteoporotic women without prior fracture.

COMPLIANCE WITH DRUG THERAPIES FOR THE TREATMENT AND PREVENTION OF OSTEOPOROSIS
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OBJECTIVES: This study investigates compliance with hormone replacement therapy (HRT), bisphosphonate